



SEQUENCE LISTING

<110> Georgopoulos, Katia

**<120> IKAROS REGULATORY ELEMENTS AND USES
THEREOF**

<130> 10287-067001

<140> US 09/755,830

<141> 2001-01-05

<150> US 08/283,300

<151> 1994-07-29

<150> US 08/238,212

<151> 1994-05-02

<150> US 08/121,438

<151> 1993-09-14

<150> US 07/946,233

<151> 1992-09-14

<160> 43

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<213> Mus musculus

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<223> mIk-2

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ccactcagag gggactcaga gcaagtctag atttgtgtgg cagagagaga cagctctcg 180
ttggccttgg ggaggcaca aacctgttcat aacctgaaga ca atg gat gtc gat 234
Met Asp Val Asp
1

gag ggt caa gac atg tcc caa gtt tca gga aag gag agc ccc cca gtc 282
Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu Ser Pro Pro Val
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agt gac act cca gat gaa ggg gat gag ccc atg cct gtc cct gag gac 330
Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro Val Pro Glu Asp
25 30 35

ctg tcc act acc tct gga gca cag aac tcc aag agt gat cga ggc 378
Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys Ser Asp Arg Gly

40

45

50

atg ggt gaa cgg cct ttc cag tgc aac cag tct ggg gcc tcc ttt acc 426
 Met Gly Arg Pro Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr
 55 60 65

cag aaa ggc aac ctc ctg cgg cac atc aag ctg cac tcg ggt gag aag 474
 Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys
 70 75 80

ccc ttc aaa tgc cat ctt tgc aac tat gcc tgc cgc cgg agg gac gcc 522
 Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Asp Ala
 85 90 95 100

ctc acc ggc cac ctg agg acg cac tcc gtt ggt aag cct cac aaa tgt 570
 Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys Pro His Lys Cys
 105 110 115

gga tat tgt ggc cgg agc tat aaa cag cga agc tct tta gag gag cat 618
 Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His
 120 125 130

aaa gag cga tgc cac aac tac ttg gaa agc atg ggc ctt ccg ggc gtg 666
 Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Val
 135 140 145

tgc cca gtc att aag gaa gaa act aac cac aac gag atg gca gaa gac 714
 Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp
 150 155 160

ctg tgc aag ata gga gca gag agg tcc ctt gtc ctg gac agg ctg gca 762
 Leu Cys Ile Gly Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala
 165 170 175 180

agc aat gtc gcc aaa cgt aag agc tct atg cct cag aaa ttt ctt gga 810
 Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly
 185 190 195

gac aag tgc ctg tca gac atg ccc tat gac agt gcc aac tat gag aag 858
 Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys
 200 205 210

gag gat atg atg aca tcc cac gtg atg gac cag gcc atc aac aat gcc 906
 Glu Asp Met Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala
 215 220 225

atc aac tac ctg ggg gct gag tcc ctg cgc cca ttg gtg cag aca ccc 954
 Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro
 230 235 240

ccc ggt agc tcc gag gtg gtg cca gtc atc agc tcc atg tac cag ctg 1002
 Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu
 245 250 255 260

cac aag ccc ccc tca gat ggc ccc cca cgg tcc aac cat tca gca cag 1050
 His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln
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gac gcc gtg gat aac ttg ctg ctg tcc aag gcc aag tct gtg tca 1098
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tcg gag cga gag gcc tcc ccg agc aac agc tgc caa gac tcc aca gat 1146
 Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp
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aca gag agc aac gcg gag gaa cag cgc agc ggc ctt atc tac cta acc 1194
 Thr Glu Ser Asn Ala Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr
 310 315 320

aac cac atc aac ccg cat gca cgc aat ggg ctg gct ctc aag gag gag 1242
 Asn His Ile Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu
 325 330 335 340

cag cgc gcc tac gag gtg ctg agg gcg gcc tca gag aac tcg cag gat 1290
 Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp
 345 350 355

gcc ttc cgt gtc agc acg agt ggc gag cag ctg aag gtc tac aag 1338
 Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys
 360 365 370

tgc gaa cac tgc cgc gtg ctc ttc ctg gat cac gtc atg tat acc att 1386
 Cys Glu His Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile
 375 380 385

cac atg ggc tgc cat ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt 1434
 His Met Gly Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys
 390 395 400

aac atg tgt ggt tat cac agc cag gac agg tac gag ttc tca tcc cat 1482
 Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His
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atc acg cgg ggg gag cat cgt tac cac ctg agc taaaacccagc caggccccac 1535
 Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser
 425 430

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 gcgttggaaat aatgtttt aatgttagtg acaggattgc attgcattcag caacattcac
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 <223> hIk-1

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 Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met Leu Asp Ala
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tcg gga gag aaa atg aat ggc tcc cac agg gac caa ggc agc tcg gct 144
 Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly Ser Ser Ala
 35 40 45

ttg tcg gga gtt gga ggc att cga ctt cct aac gga aaa cta aag tgt 192
 Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys Leu Lys Cys
 50 55 60

A³
 gat atc tgt ggg atc att tgc atc ggg ccc aat gtg ctc atg gtt cac 240
 Asp Ile Cys Gly Ile Ile Cys Ile Gly Pro Asn Val Leu Met Val His
 65 70 75 80

aaa aga agc cac act gga gaa cgg ccc ttc cag tgc aat cag tgc ggg 288
 Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly
 85 90 95

gcc tca ttc acc cag aag ggc aac ctg ctc cgg cac atc aag ctg cat 336
 Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
 100 105 110

tcc ggg gag aag ccc ttc aaa tgc cac ctc tgc aac tac gcc tgc cgc 384
 Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
 115 120 125

cgg agg gac gcc ctc act ggc cac ctg agg acg cac tcc gtt ggt aaa 432
 Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys
 130 135 140

cct cac aaa tgt gga tat tgt ggc cga agc tat aaa cag cga acg tct 480
 Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Thr Ser
 145 150 155 160

tta gag gaa cat aaa gag cgc tgc cac aac tac ttg gaa agc atg ggc 528
 Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly
 165 170 175

ctt ccg ggc aca ctg tac cca gtc att aaa gaa gaa act aag cac agt 576
 Leu Pro Gly Thr Leu Tyr Pro Val Ile Lys Glu Glu Thr Lys His Ser
 180 185 190

gaa atg gca gaa gac ctg tgc aag ata gga tca gag aga tct ctc gtg 624
 Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu Val
 195 200 205

ctg gac aga cta gca agt aat gtc gcc aaa cgt aag agc tct atg cct 672
 Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro
 210 215 220

cag aaa ttt ctt ggg gac aag ggc ctg tcc gac acg ccc tac gac agt Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp Ser 225 230 235 240	720
gcc acg tac gag aag gag aac gaa atg atg aag tcc cac gtg atg gac Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met Asp 245 250 255	768
caa gcc atc aac aac gcc atc aac tac ctg ggg gcc gag tcc ctg cgc Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg 260 265 270	816
ccg ctg gtg cag acg ccc ccg ggc ggt tcc gag gtg gtc ccg gtc atc Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val Ile 275 280 285	864
agc ccg atg tac cag ctg cac agg cgc tcg gag ggc acc ccg cgc tcc Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg Ser 290 295 300	912
aac cac tcg gcc cag gac agc gcc gtg gag tac ctg ctg ctg ctc tcc Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Ser 305 310 315 320	960
aag gcc aag ttg gtg ccc tcg gag cgc gag gcg tcc ccg agc aac agc Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser 325 330 335	1008
tgc caa gac tcc acg gac acc gag agc aac aac gag gag cag cgc agc Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg Ser 340 345 350	1056
ggt ctt atc tac ctg acc aac cac atc gcc cga cgc gcg caa cgc gtg Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg Val 355 360 365	1104
tcg ctc aag gag gag cac cgc gcc tac gac ctg ctg cgc gcc gcc tcc Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser 370 375 380	1152
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atg aag gtg tac aag tgc gaa cac tgc cgg gtg ctc ttc ctg gat cac Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His 405 410 415	1248
gtc atg tac acc atc cac atg ggc tgc cac ggc ttc cgt gat cct ttt Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe 420 425 430	1296
gag tgc aac atg tgc ggc tac cac agc cag gac cgg tac gag ttc tcg Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser 435 440 445	1344
tcg cac ata acg cga ggg gag cac cgc ttc cac atg agc taa	1386

Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser
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 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
 20 25 30
 gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag 144
 Val Pro Glu Asp Leu Ser Thr Ser Gly Ala Gln Gln Asn Ser Lys
 35 40 45
 agt gat cga ggc atg gcc agt aat gtt aaa gta gag act cag agt gat 192
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
 50 55 60
 gaa gag aat ggg cgt gcc tgt gaa atg aat ggg gaa gaa tgt gca gag 240
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
 65 70 75 80
 gat tta cga atg ctt gat gcc tcg gga gag aaa atg aat ggc tcc cac 288
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
 85 90 95
 agg gac caa ggc agc tcg gct ttg tca gga gtt gga ggc att cga ctt 336
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
 100 105 110
 cct aac gga aaa cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg 384
 Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
 115 120 125
 ccc aat gtg ctc atg gtt cac aaa aga agt cat act ggt gaa cgg cct 432
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro
 130 135 140
 ttc cag tgc aac cag tct ggg gcc tcc ttt acc cag aaa ggc aac ctc 480
 Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
 145 150 155 160
 ctg cgg cac atc aag ctg cac ggt gag aag ccc ttc aaa tgc cat 528
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His

PROTEIN SEQUENCES

165

170

175

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agg acg cac tcc gga gac aag tgc ctg tca gac atg ccc tat gac agt	624		
Arg Thr His Ser Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser			
195	200	205	
gcc aac tat gag aag gag gat atg atg aca tcc cac gtg atg gac cag	672		
Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln			
210	215	220	
gcc atc aac aat gcc atc aac tac ctg ggg gct gag tcc ctg cgc cca	720		
Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro			
225	230	235	240
ttg gtg cag aca ccc ccc ggt agc tcc gag gtg gtg cca gtc atc agc	768		
Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser			
245	250	255	
tcc atg tac cag ctg cac aag ccc ccc tca gat ggc ccc cca cgg tcc	816		
Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser			
260	265	270	
aac cat tca gca cag gac gcc gtg gat aac ttg ctg ctg tcc aag	864		
Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys			
275	280	285	
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290	295	300	
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Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly			
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ctt atc tac cta acc aac cac atc aac ccg cat gca cgc aat ggg ctg	1008		
Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu			
325	330	335	
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Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser			
340	345	350	
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Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln			
355	360	365	
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370	375	380	
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Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg			
385	390	395	400

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Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr	
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ccactcagag gggactcaga gcaagtctag atttgtgtgg cagagagaga cagctctcg ^t	180
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Met Asp Val Asp	
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Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu Ser Pro Pro Val	
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Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro Val Pro Glu Asp	
25 30 35	
ctg tcc act acc tct gga gca cag cag aac tcc aag agt gat cga ggc	378
Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys Ser Asp Arg Gly	
40 45 50	
atg gcc agt aat gtt aaa gta gag act cag agt gat gaa gag aat ggg	426
Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly	
55 60 65	
cgt gcc tgt gaa atg aat ggg gaa gaa tgt gca gag gat tta cga atg	474
Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met	
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ctt gat gcc tcg gga gag aaa atg aat ggc tcc cac agg gac caa ggc	522
Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly	
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agc tcg gct ttg tca gga gtt gga ggc att cga ctt cct aac gga aaa	570
Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys	
105 110 115	
cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg ccc aat gtg ctc	618

Leu	Lys	Cys	Asp	Ile	Cys	Gly	Ile	Val	Cys	Ile	Gly	Pro	Asn	Val	Leu	
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Met	Val	His	Lys	Arg	Ser	His	Thr	Gly	Glu	Arg	Pro	Phe	Gln	Cys	Asn	
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Arg	Ser	Ser	Leu	Glu	Glu	His	Lys	Glu	Arg	Cys	His	Asn	Tyr	Leu	Glu	
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Leu	Val	Leu	Asp	Arg	Leu	Ala	Ser	Asn	Val	Ala	Lys	Arg	Lys	Ser	Ser	
265							270				275					
atg cct cag aaa ttt ctt gga gac aag tgc ctg tca gac atg ccc tat															1098	
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gac agt gcc aac tat gag aag gag gat atg atg aca tcc cac gtg atg															1146	
Asp	Ser	Ala	Asn	Tyr	Glu	Lys	Glu	Asp	Met	Met	Thr	Ser	His	Val	Met	
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Arg	Pro	Leu	Val	Gln	Thr	Pro	Pro	Gly	Ser	Ser	Glu	Val	Val	Pro	Val	
325							330				335		340			
atc agc tcc atg tac cag ctg cac aag ccc ccc tca gat ggc ccc cca															1290	
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345

350

355

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gag gcc tcc ccg agc aac agc tgc caa gac tcc aca gat aca gag agc Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser 245 250 255			768
aac gcg gag gaa cag cgc agc ggc ctt atc tac cta acc aac cac atc Asn Ala Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile 260 265 270			816
aac ccg cat gca cgc aat ggg ctg gct ctc aag gag gag cag cgc gcc Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala 275 280 285			864
tac gag gtg ctg agg gcg gcc tca gag aac tcg cag gat gcc ttc cgt Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg 290 295 300			912
gtg gtc agc acg agt ggc gag cag ctg aag gtg tac aag tgc gaa cac Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His 305 310 315 320			960
tgc cgc gtg ctc ttc ctg gat cac gtc atg tat acc att cac atg ggc Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly 325 330 335			1008
tgc cat ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt aac atg tgt Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys 340 345 350			1056
ggt tat cac agc cag gac agg tac gag ttc tca tcc cat atc acg cgg Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg 355 360 365			1104
ggg gag cat cgt tac cac ctg agc Gly Glu His Arg Tyr His Leu Ser 370 375			1128
<210> 7			
<211> 1004			
<212> DNA			
<213> Mus musculus			
<220>			
<221> CDS			
<222> (1) ... (1005)			
<400> 7			
gga gaa cgg ccc ttc cag tgc aat cag tgc ggg gcc tca ttc acc cag Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln 1 5 10 15			48

aag ggc aac ctg ctc cg	cac atc aag ctg cat tcc	ggg gag aag ccc	96
Lys Gly Asn Leu Leu Arg	His Ile Lys Leu His Ser	Gly Glu Lys Pro	
20	25	30	
ttc aaa tgc cac ctc tgc	aac tac gcc tgc cgc	cg agg gag gac gcc	144
Phe Lys Cys His Leu Cys	Asn Tyr Ala Cys Arg	Arg Arg Asp Ala Leu	
35	40	45	
act ggc cac ctg agg acg	cac tcc gtc att aaa	gaa gaa act aag cac	192
Thr Gly His Leu Arg	Thr His Ser Val Ile	Lys Glu Glu Thr Lys His	
50	55	60	
agt gaa atg gca gaa gac	ctg tgc aag ata	gga tca gag aga tct ctc	240
Ser Glu Met Ala Glu Asp	Leu Cys Lys Ile	Gly Ser Glu Arg Ser Leu	
65	70	75	80
gtg ctg gac aga cta gca	agt aat gtc gcc aaa	cgt aag agc tct atg	288
Val Leu Asp Arg Leu Ala	Ser Asn Val Ala	Lys Arg Lys Ser Ser Met	
85	90	95	
cct cag aaa ttt ctt ggg	gac aag ggc ctg tcc	gac acg ccc tac gac	336
Pro Gln Lys Phe Leu Gly	Asp Lys Gly Leu Ser	Asp Thr Pro Tyr Asp	
100	105	110	
agt gcc acg tac gag aag	gag aac gaa atg atg	aag tcc cac gtg atg	384
Ser Ala Thr Tyr Glu Lys	Glu Asn Glu Met Met	Lys Ser His Val Met	
115	120	125	
gac caa gcc atc aac aac	gcc atc aac tac	ctg ggg gcc gag tcc	432
Asp Gln Ala Ile Asn Asn	Ala Ile Asn Tyr	Leu Gly Ala Glu Ser Leu	
130	135	140	
cgc ccg ctg gtg cag acg	ccc ccg ggc ggt	tcc gag gtg gtc ccg	480
Arg Pro Leu Val Gln Thr	Pro Pro Gly Gly	Ser Glu Val Val Pro Val	
145	150	155	160
atc agc ccg atg tac cag	ctg cac agg cgc	tcg gag ggc acc ccg	528
Ile Ser Pro Met Tyr Gln	Leu His Arg Arg	Ser Glu Gly Thr Pro Arg	
165	170	175	
tcc aac cac tcg gcc cag	gac agc gcc gtg gag	tac ctg ctg ctc	576
Ser Asn His Ser Ala Gln	Asp Ser Ala Val	Glu Tyr Leu Leu Leu	
180	185	190	
tcc aag gcc aag ttg	gtg ccc tcg gag	cgc gag ggc tcc ccg	624
Ser Lys Ala Lys Leu Val	Pro Ser Glu Arg	Glu Ala Ser Pro Ser Asn	
195	200	205	
agc tgc caa gac tcc acg	gac acc gag agc	aac aac gag gag cag	672
Ser Cys Gln Asp Ser Thr	Asp Thr Glu Ser	Asn Asn Glu Glu Gln Arg	
210	215	220	
agc ggt ctt atc tac	ctg acc aac cac	atc gcc cga cgc	720
Ser Gly Leu Ile Tyr	Leu Thr Asn His	Ile Ala Arg Arg Ala Gln Arg	
225	230	235	240
gtg tcg ctc aag gag gag	cac cgc gcc tac	gac ctg ctg cgc	768
		gcc	

Val Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala		
245	250	255
tcc gag aac tcg cag gac gcg ctc cgc gtg gtc agc acc agc ggg gag		816
Ser Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu		
260	265	270
cag atg aag gtg tac aag tgc gaa cac tgc cgg gtg ctc ttc ctg gat		864
Gln Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp		
275	280	285
cac gtc atg tac acc atc cac atg ggc tgc cac ggc ttc cgt gat cct		912
His Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro		
290	295	300
ttt gag tgc aac atg tgc ggc tac cac agc cag gac cgg tac gag ttc		960
Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe		
305	310	320
tcg tcg cac ata acg cga ggg gag cac cgc ttc cac atg agc ta		1004
Ser Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser Ser		
325	330	335
<210> 8		
<211> 103		
<212> DNA		
<213> Mus musculus		
<400> 8		
tttggttata aatgtattga ttgcattcccc attaccaga aggccaatat ttaattggag		60
tcttaactca attgtgtttt cgtcagttgg taagcctcac aaa		103
<210> 9		
<211> 116		
<212> DNA		
<213> Mus musculus		
<400> 9		
atgggccttc cgggcatgta cccaggtaa cactgaggcc ctgctgagct gcacccctcc		60
ccctcccaagc gcctgggcca ggtatggggct ctgtggcctg tttcagccac aggagg		116
<210> 10		
<211> 94		
<212> DNA		
<213> Mus musculus		
<400> 10		
cctgtgtgct gctgtgttgc tatcttgtga cttattttg cagtgacact gagtggcctc		60
ctgtgttgc tcttcagcc agtaatgtta aagt		94
<210> 11		
<211> 120		
<212> DNA		
<213> Mus musculus		
<400> 11		

gagccctggc agatgtgtcc tgtctgctgt gacactagaa caccattcaa cccctgggtg 60
 tagatttcac ttatgaccat ctacttcccg caggagacaa gtgcctgtca gacatgccct 120

<210> 12
 <211> 120
 <212> DNA
 <213> *Mus musculus*

<400> 12
 acatgtgtgg ttatcacagc caggacaggt acgagttctc atccccatatc acgcgggggg 60
 agcatcgta ccacctgagc taaacccagc caggccccac tgaagcacaa agatagctgg 120

<210> 13
 <211> 470
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> consensus sequence

<221> VARIANT
 <222> (1) . . . (470)
 <223> Xaa = Any Amino Acid

<400> 13
 Xaa Xaa Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn
 1 5 10 15
 Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg
 20 25 30
 Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln
 35 40 45
 Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly
 50 55 60
 Lys Leu Lys Cys Asp Ile Cys Gly Ile Xaa Cys Ile Gly Pro Asn Val
 65 70 75 80
 Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys
 85 90 95
 Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His
 100 105 110
 Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn
 115 120 125
 Tyr Ala Cys Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His
 130 135 140
 Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys
 145 150 155 160
 Gln Arg Xaa Ser Leu Glu His Lys Glu Arg Cys His Asn Tyr Leu
 165 170 175
 Glu Ser Met Gly Leu Pro Gly Xaa Xaa Xaa Pro Val Ile Lys Glu Glu
 180 185 190
 Thr Xaa His Xaa Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Xaa Glu
 195 200 205
 Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys
 210 215 220
 Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Xaa Leu Ser Asp Xaa
 225 230 235 240
 Pro Tyr Asp Ser Ala Xaa Tyr Glu Lys Glu Xaa Xaa Met Met Xaa Ser
 245 250 255

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<210> 14
<211> 38
<212> DNA
<213> Artificial Sequence
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<220>
<223> probe

<400> 14
aqaaqtttcc ataagatqat qaatqqqqqt qacqaqa

38

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 15
ggctgccacg gcttccgtga tcct

24

<210> 16
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetically generated primer

<400> 16

agcgggtctgg ggaaacatct agga

24

<210> 17

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetically generated primer

<400> 17

agtaatgtta aagttagagac tcag

24

<210> 18

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetically generated primer

<400> 18

gtatgacttc ttttgtgaac catg

24

<210> 19

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetically generated primer

<400> 19

ccagcctctg agcccgaaaa gcga

24

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetically generated primer

<400> 20

cactacacct ggagcacagc agaa

24

<210> 21

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetically generated primer

<400> 21	21
ggtgaacggc ctttccagtg c	
<210> 22	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 22	21
tctgaggcat agagctctta c	
<210> 23	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 23	24
catagggcat gtctgacagg cact	
<210> 24	
<211> 28	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 24	28
tcagcttttg ggaatgtatt ccctgtca	
<210> 25	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 25	24
tcagcttttg agaataccct gtca	
<210> 26	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 26	17
ggcatgactc agagcga	

<210> 27	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 27	
ccttcatctg gagtgtca	25
<210> 28	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 28	
ctgaaacttg ggacatgtct tg	22
<210> 29	
<211> 30	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 29	
aaaggatccg aacataacta tggatcagcc	30
<210> 30	
<211> 29	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 30	
tttaccggtg tcttcagggtt atctcctgc	29
<210> 31	
<211> 19	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetically generated primer	
<400> 31	
cgtaaaggcc acaagttca	19
<210> 32	

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<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 32
cttgaagttc accttgatgc                                20

<210> 33
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 33
tcgacgatcg atcgatcgat cataacttcg tataatgtat gctatacgaa gttattaagc      60
tt                                62

<210> 34
<211> 41
<212> DNA
<213> Artificial Sequence
.

<220>
<223> synthetically generated primer

<400> 34
gatccataac ttctgtataat gtatgtata cgaaggattt t                                41

<210> 35
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 35
cttagaaataa cttcgtatag catacattat acgaagttat ggatcc                                46

<210> 36
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary motif

<221> VARIANT
<222> (1)...(21)
<223> Xaa = Any Amino Acid

<400> 36

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Cys Xaa Xaa Cys Xaa
 1 5 10 15
 His Xaa Xaa Xaa His
 20

<210> 37
 <211> 431
 <212> PRT
 <213> Mus musculus

<400> 37
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
 1 5 10 15
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
 20 25 30
 Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
 35 40 45
 Ser Asp Arg Gly Met Gly Gln Arg Pro Phe Gln Cys Asn Gln Ser Gly
 50 55 60
 Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
 65 70 75 80
 Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
 85 90 95
 Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys
 100 105 110
 Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser
 115 120 125
 Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly
 130 135 140
 Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu
 145 150 155 160
 Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu
 165 170 175
 Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln
 180 185 190
 Lys Phe Leu Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser Ala
 195 200 205
 Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln Ala
 210 215 220
 Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu
 225 230 235 240
 Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser Ser
 245 250 255
 Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser Asn
 260 265 270
 His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys Ala
 275 280 285
 Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln
 290 295 300
 Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly Leu
 305 310 315 320
 Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu Ala
 325 330 335
 Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser Glu
 340 345 350
 Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln Leu
 355 360 365

Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His Val
 370 375 380
 Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg Asp
 385 390 395 400
 Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu
 405 410 415
 Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser
 420 425 430

<210> 38
 <211> 461
 <212> PRT
 <213> Homo sapiens

<400> 38
 Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly Arg Ala Cys
 1 5 10 15
 Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met Leu Asp Ala
 20 25 30
 Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly Ser Ser Ala
 35 40 45
 Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys Leu Lys Cys
 50 55 60
 Asp Ile Cys Gly Ile Ile Cys Ile Gly Pro Asn Val Leu Met Val His
 65 70 75 80
 Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly
 85 90 95
 Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
 100 105 110
 Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
 115 120 125
 Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys
 130 135 140
 Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Thr Ser
 145 150 155 160
 Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly
 165 170 175
 Leu Pro Gly Thr Leu Tyr Pro Val Ile Lys Glu Glu Thr Lys His Ser
 180 185 190
 Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu Val
 195 200 205
 Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro
 210 215 220
 Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp Ser
 225 230 235 240
 Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met Asp
 245 250 255
 Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg
 260 265 270
 Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val Ile
 275 280 285
 Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg Ser
 290 295 300
 Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Ser
 305 310 315 320
 Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser
 325 330 335

Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg Ser
 340 345 350
 Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg Val
 355 360 365
 Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser
 370 375 380
 Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu Gln
 385 390 395 400
 Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His
 405 410 415
 Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe
 420 425 430
 Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser
 435 440 445
 Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser
 450 455 460

<210> 39
 <211> 432
 <212> PRT
 <213> Mus musculus

<400> 39
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
 1 5 10 15
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
 20 25 30
 Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
 35 40 45
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
 50 55 60
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
 65 70 75 80
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
 85 90 95
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
 100 105 110
 Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
 115 120 125
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro
 130 135 140
 Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
 145 150 155 160
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His
 165 170 175
 Leu Cys Asn Tyr Ala Cys Arg Arg Asp Ala Leu Thr Gly His Leu
 180 185 190
 Arg Thr His Ser Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser
 195 200 205
 Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln
 210 215 220
 Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro
 225 230 235 240
 Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser
 245 250 255
 Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser
 260 265 270

Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys
 275 280 285
 Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys
 290 295 300
 Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly
 305 310 315 320
 Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu
 325 330 335
 Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser
 340 345 350
 Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln
 355 360 365
 Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His
 370 375 380
 Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg
 385 390 395 400
 Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr
 405 410 415
 Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser
 420 425 430

<210> 40
 <211> 518
 <212> PRT
 <213> Mus musculus

<400> 40
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
 1 5 10 15
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
 20 25 30
 Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
 35 40 45
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
 50 55 60
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
 65 70 75 80
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
 85 90 95
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
 100 105 110
 Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
 115 120 125
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro
 130 135 140
 Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
 145 150 155 160
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His
 165 170 175
 Leu Cys Asn Tyr Ala Cys Arg Arg Asp Ala Leu Thr Gly His Leu
 180 185 190
 Arg Thr His Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg
 195 200 205
 Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys His
 210 215 220
 Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Val Cys Pro Val Ile Lys
 225 230 235 240

Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly
 245 250 255
 Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys
 260 265 270
 Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser
 275 280 285
 Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr
 290 295 300
 Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly
 305 310 315 320
 Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu
 325 330 335
 Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser
 340 345 350
 Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn
 355 360 365
 Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala
 370 375 380
 Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala
 385 390 395 400
 Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro
 405 410 415
 His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu
 420 425 430
 Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val
 435 440 445
 Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg
 450 455 460
 Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His
 465 470 475 480
 Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr
 485 490 495
 His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu
 500 505 510
 His Arg Tyr His Leu Ser
 515

<210> 41
 <211> 390
 <212> PRT
 <213> Mus musculus

<400> 41
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
 1 5 10 15
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
 20 25 30
 Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
 35 40 45
 Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly
 50 55 60
 Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
 65 70 75 80
 Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
 85 90 95
 Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Ile Lys
 100 105 110

Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly
 115 120 125
 Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys
 130 135 140
 Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser
 145 150 155 160
 Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr
 165 170 175
 Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly
 180 185 190
 Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu
 195 200 205
 Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser
 210 215 220
 Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn
 225 230 235 240
 Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala
 245 250 255
 Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala
 260 265 270
 Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro
 275 280 285
 His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu
 290 295 300
 Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val
 305 310 315 320
 Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg
 325 330 335
 Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His
 340 345 350
 Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr
 355 360 365
 His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu
 370 375 380
 His Arg Tyr His Leu Ser
 385 390

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 <211> 376
 <212> PRT
 <213> Mus musculus

<400> 42
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
 1 5 10 15
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
 20 25 30
 Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
 35 40 45
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
 50 55 60
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
 65 70 75 80
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
 85 90 95
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
 100 105 110

Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
 115 120 125
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Asp Lys Cys
 130 135 140
 Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met
 145 150 155 160
 Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr
 165 170 175
 Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser
 180 185 190
 Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro
 195 200 205
 Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val
 210 215 220
 Asp Asn Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg
 225 230 235 240
 Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser
 245 250 255
 Asn Ala Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile
 260 265 270
 Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala
 275 280 285
 Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg
 290 295 300
 Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His
 305 310 315 320
 Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly
 325 330 335
 Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys
 340 345 350
 Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg
 355 360 365
 Gly Glu His Arg Tyr His Leu Ser
 370 375

<210> 43

<211> 334

<212> PRT

<213> Mus musculus

<400> 43

Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln
 1 5 10 15
 Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro
 20 25 30
 Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Asp Ala Leu
 35 40 45
 Thr Gly His Leu Arg Thr His Ser Val Ile Lys Glu Glu Thr Lys His
 50 55 60
 Ser Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu
 65 70 75 80
 Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met
 85 90 95
 Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp
 100 105 110
 Ser Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met
 115 120 125

Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu
 130 135 140
 Arg Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val
 145 150 155 160
 Ile Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg
 165 170 175
 Ser Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu
 180 185 190
 Ser Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn
 195 200 205
 Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg
 210 215 220
 Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg
 225 230 235 240
 Val Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala
 245 250 255
 Ser Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu
 260 265 270
 Gln Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp
 275 280 285
 His Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro
 290 295 300
 Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe
 305 310 315 320
 Ser Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser
 325 330

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